

ABSTRACT OF THE DISCLOSURE

A method for manufacturing aluminium alloy parts with precipitation hardening including friction stir welding of at least two elements made from the same alloy or different alloys, solution heat treatment, and quenching of welded parts, in which the elements are subjected to heat treatment before welding at temperature T for at least $2t_1$, t_1 being defined as the minimum treatment duration at temperature T leading to a specific melting peak energy defined by AED equal to less than 1 J/g. A method according to the invention substantially avoids an increase in the grain size following solution heat treatment after welding. The invention further relates to novel aluminum materials as well as uses therefor.